

WHAT WE CLAIM IS

1. A disposable wound-therapy device comprising:
 - a fluid impermeable housing having a cavity therein, wherein the cavity includes at least one opening adapted to encompass at least a portion of a wound region of a patient;
 - a perimeter surrounding the at least one opening;
 - means for sealing the perimeter to a surface of the patient proximate the wound region; and
 - means for at least one of absorbing and removing oxygen from within the cavity integrated into the housing.
2. The wound-therapy device according to Claim 1, wherein the absorbing means is placed within the cavity.
3. The wound-therapy device according to Claim 1, wherein the absorbing means comprises a chemical absorber.
4. The wound-therapy device according to Claim 3, wherein the chemical absorber is selected from the group consisting of metal powders, activated carbon, catalyst material, zeolites and mixtures and combinations thereof.
5. The wound-therapy device according to Claim 1, wherein the absorbing means comprises at least one electrochemical cell.
- 20 6. The wound-therapy device according to Claim 5, wherein the electrochemical cell comprises a metal/air cell.

7. The wound-therapy device according to Claim 6, wherein the metal/air cell comprises one of the group consisting of a zinc/air cell, a magnesium/air cell, an aluminum/air cell, and an iron/air cell.
8. The wound-therapy device according to Claim 5, wherein the electrochemical cell comprises a nafion-based cell.
9. The wound-therapy device according to Claim 1, additionally comprising means for absorbing fluid associated with the cavity.
10. The wound-therapy device according to Claim 9, wherein the fluid-absorbing means comprises an antimicrobial material.
11. The wound-therapy device according to Claim 10, wherein the antimicrobial materials comprise one or more materials selected from the group consisting of silver compounds, halide compounds, peroxides, super oxides, and organic disinfectants.
12. The wound-therapy device according to Claim 9, wherein the fluid-absorbing means comprises a porous material.
13. The wound-therapy device according to Claim 12, wherein the porous material comprises an adhesive mesh.
14. The wound-therapy device according to Claim 1, wherein the housing comprises one or more materials selected from the group consisting of steel, aluminum, copper alloys, and dense plastics.
- 20 15. The wound-therapy device according to Claim 14, wherein the dense plastics comprise materials selected from the group consisting of polypropylene, polyvinyl chlorides, polyethylene, berex, nylon, and Teflon.

16. The wound-therapy device according to Claim 1, further comprising a valve associated with the housing, wherein the valve comprises means for introducing additional oxygen into the cavity.

17. A disposable wound-therapy device comprising:

5 - a fluid-impermeable housing having a cavity therein, wherein the cavity includes at least one opening adapted to encompass at least a portion of a wound region of a patient;

10 - a perimeter surrounding the at least one opening;

 - means for sealing the perimeter to a surface of the patient proximate the wound region; and

 - a porous sponge associated with the cavity, wherein the sponge is capable of retaining a fluid therein; and

 - means for removing the fluid from the sponge, and out of the cavity.

18. The wound-therapy device according to Claim 17, wherein the fluid removing means is integrated into the housing.

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19. The wound-therapy device according to Claim 17, wherein the porous sponge comprises an antimicrobial material.

20. The wound-therapy device according to Claim 17, wherein the porous sponge is at least partially impregnated with a fluid.

20 21. The wound-therapy device according to Claim 20, wherein the fluid comprises an antimicrobial fluid.

22. The wound-therapy device according to Claim 17, the housing comprising a fluid-retention chamber adjacent the cavity, wherein the removing means removes a fluid from the porous sponge into the fluid-retention chamber.

23. The wound-therapy device according to Claim 17, wherein the porous sponge is at least partially within the cavity.

5 24. The wound-therapy device according to Claim 17, wherein the removing means comprises a super-polymer absorber.

25. The wound-therapy device according to Claim 24, wherein the super-polymer absorber is one or more crystals selected from the group consisting of sodium polyacrylate and polyacrylamide.

10 26. The wound-therapy device according to Claim 17, wherein the removing means comprises the housing having an osmotic cell, wherein the osmotic cell comprises a fluid-retention chamber and an osmotic membrane in fluidic communication with the porous sponge.

15 27. The wound-therapy device according to Claim 17, wherein the removing means comprises an electro-osmotic cell, the electro-osmotic cell comprising an anode and a cathode.

28. The wound-therapy device according to Claim 17, wherein the removing means comprises an electro-osmotic cell, the electro-osmotic cell comprising a cationic membrane.

20 29. The wound-therapy device according to Claim 17, wherein the removing means comprises an electro-osmotic cell, the electro-osmotic cell comprising an anionic membrane.

30. The wound-therapy device according to Claim 17, wherein the housing comprises a material that is resiliently deformable upon application of a pressure.

31. The wound-therapy device according to Claim 30, wherein the removing means comprises depressing a portion of the resiliently deformable housing to, in turn, create
5 a negative pressure over the wound.

32. The wound-therapy device according to Claim 17, wherein the removing means comprises a syringe associated with the housing, which may withdraw any fluid retained within the sponge.

33. The wound-therapy device according to Claim 30, the housing having a fluid-
10 retention chamber adjacent the porous sponge, wherein the removing means comprises a one-way valve between the porous sponge and the fluid-retention chamber such that, upon application of pressure, fluid is removed from the sponge and into the fluid-retention chamber.

34. A disposable wound-therapy device comprising:
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- a fluid impermeable housing having a cavity therein, wherein the cavity includes at least one opening adapted to encompass at least a portion of a wound region of a patient;
- a perimeter surrounding the at least one opening;
- means for sealing the perimeter to a surface of the patient proximate the wound region; and
- means for removing fluid from within the wound region, and out of the cavity.

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35. The device according to Claim 34, wherein the fluid removing means continuously removes the fluid from within the wound region.

36. The device according to Claim 34, wherein the fluid removing means is integrated into the housing.
37. The device according to Claim 34, wherein the fluid removing means comprises at least one capillary tube.
- 5 38. The device according to Claim 34, wherein the fluid removing means comprises an absorbent polymer.
39. The device according to Claim 34, additionally comprising a fluid reservoir external to the cavity, and associated with the fluid removing means, such that fluid removed from the wound region via the fluid removing means is delivered to the fluid reservoir.
- 10 40. The device according to Claim 39, wherein the fluid reservoir additionally comprises means for absorbing and retaining fluid.
41. The device according to Claim 40, wherein the absorbing and retaining means comprises a porous matrix.
- 15 42. The wound-therapy device according to Claim 34, wherein the housing comprises a material that is resiliently deformable upon application of a pressure.
43. The wound-therapy device according to Claim 39, wherein the removing means comprises depressing a portion of the resiliently deformable housing to, in turn, create a negative pressure over the wound.
- 20 44. The wound-therapy device according to Claim 34, wherein the removing means comprises a syringe associated with the housing, which may withdraw any fluid retained within the sponge.

45. A device for promoting healing of a wound region, comprising:

- at least one device capable of exerting an approximately downward pressure on at least two tissue regions of a patient surrounding the wound region, wherein the at least two tissue regions are located distally from each other across the wound region; and
- means for maintaining the exerted pressure for one or more hours.

46. The device according to Claim 45, wherein the at least one device comprises at least two pressure bands, which bands may be placed around an appendage and proximate the wound region, wherein the exerted pressure maintaining means comprises constructing the pressure bands from a resiliently elastic material.

47. The device according to Claim 45, wherein the wound region includes an open wound area and a perimeter surrounding the open wound area, and the device includes means for substantially closing the open wound area by forcing at least a first region of the perimeter towards a second region of the perimeter.

48. The device according to Claim 47, wherein the closing means comprises means for connecting the at least two pressure bands together.

49. The device according to Claim 47, wherein the closing means comprises an adhesive strip capable of bridging across the open wound area.

50. A method of promoting healing of a wound region, comprising the steps of:

- placing a device capable of exerting an approximately downward pressure on at least two tissue regions of a patient surrounding the wound region; and
- exerting a downward pressure on the at least two tissue regions using the device, to, in turn, substantially close the wound region.

51. The method according to Claim 50, further comprising the step of associating an absorbent material with the wound region to, in turn, removing wound fluid from within the wound region.

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